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ABSTRACT

The ultimate effectiveness of career education curricula can be determined only when the children who have been influenced by them become young adults. However, decisions must be made now about which career education paradigms should be translated into curriculum materials, and which materials already developed should be further refined, installed, tested, and disseminated. Logic validation of the rationales and paradigms used can be carried out prior to the full development and implementation of the programs and is necessary for the wise use of limited funds and resources. Topics discussed in detail in the area of basic issues in career development education are: stability vs. change, technology as master or servant, who is an educated person, locus of motivation, and fidelity vs. anomy. General guidelines for career development curricula consider assumptions about the five issues discussed in the first portion of the document, from which seven essential qualities for career development curricula can be inferred. Finally, seven design principles are developed and the whole framework is used to examine the logical validity of the Career Development for Children Project (CDCP) for a K-12 curriculum in career education. (SA)

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APPROACHES TO THE LOGICAL VALIDATION OF CAREER DEVELOPMENT CURRICULA PARADIGMS

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INTRODUCTION

There has been a recent strong thrust for developing and implementing career education programs in the nation's schools (Marland, 1972). As Crites points out, this is not a new thrust (1973). Crites cites the work of Frank Parsons in the 1920's which outlined three stages to career development. These included 1) self analysis by the student of his capabilities and interests, 2) becoming aware of the demands and responsibilities of various occupations, and 3) logically matching the capabilities of oneself to the demands of a particular occupation. Crites goes on to mention the contribution of Eli Ginzberg who extended this paradigm by conceptualizing career choice, not as a single event at some point in time but rather as a largely irreversible, ongoing normal developmental process. According to Ginzberg's conceptualization, all children engage in the process of career development toward solving the problem of becoming what they want with the associated career related status and rewards within the framework of their social, economic, intellectual and personality resources. Crites goes on to point out that Donald Super further refined the notion of career education adding the concept of "career maturity." According to Super career maturity is evidenced by five factors. These include 1) awareness of the need and opportunity to choose an occupation, 2) the amount of reliable information a person has about occupations and his ability to use this information to logically plan and make rational career decisions, 3) the consistency of the individual's occupational preference over time, 4) the development of personal psychological attributes consistent with the role requirements for the chosen career and 5) how

close the occupational selection matches the ideals, interests, abilities, and resources of the individual. Crites discusses the various scales and measures which have been and are currently being developed to measure the degree to which career maturity has been obtained by adolescents and young adults. It appears from his analysis that numerous measures are available for the validation of career education curricula. To the extent that such programs are concerned with the goals for career education which have been formulated and refined from the early 1920's to the present and to the extent that Super's criteria or other similar criteria have been operationalized in the form of various inventories and scales, the effect of such programs can be easily evaluated at some point in the future. The question which remains is, how can career development curricula be evaluated before their full development and implementation?

Numerous groups have been engaged in developing curriculum materials for career education. As leaders in the United States Office of Education and the National Institute for Education continue to emphasize career education as a priority topic for development and research many more groups will become involved in the design of instructional programs and materials to achieve the goals of career education. It will take years for these materials and programs to be developed, refined, installed and tested. Programs beginning in the elementary school and extending upward through the secondary school are not likely to bring about noticeable changes in the measures Crites discusses except after sequential use across grade levels for several years. Perhaps the development of new scales appropriate for use with elementary school age children to measure dimensions of career maturity would give some earlier indication of the potential

effectiveness of various curricula. Ultimately, however, the effectiveness of such curricula can be determined only when the children who have been influenced by them become young adults and make increasingly more major and perhaps largely irreversible career choices. How well these individuals choose; how informed they are about themselves, their culture and its occupational roles, responsibilities and rewards; how satisfied they are with themselves and their personal-social-occupational role; how well they understand their own role in relation to other roles, and how well they function toward fulfilling the double demands of societal productivity and personal self-actualization within their primary work activity are the ultimate criteria by which educational programs and curricula should be evaluated. Yet decisions must be made now about which career education paradigms for curriculum design should be translated into curriculum materials and which curriculum materials which have already been developed should be further refined, installed, tested and disseminated widely to the nation's schools. Logical validation of the rationales and paradigms used by curriculum developers to generate the actual topics, activities and materials of the curricula they propose can be carried out prior to the full development or implementation of the programs. Such logical validation is necessary if limited funds and resources are to be expended wisely in the development of a finite number of properly conceptualized programs which have a reasonable probability of succeeding in meeting the generally stated and accepted goals for career education. It is the purpose of this paper to provide a means for determining the logical validity of the Career Development for Children Project (CDCP) paradigm for a K - 12 curriculum in career education. A logical validation framework will be constructed from two prospectives. The first prospective allows

the CDCP curriculum generation paradigm to be examined against some basic issues underlying career education. The second prospective allows the underlying philosophy and organization of the program to be evaluated against general guidelines for curriculum design.

Basic Issue in Career Development Education

The issues to be dealt with are present in any situation in which education occurs. To the extent that career education curricula begin to deliberately prepare the student to enter the productive work force of our nation through preparation for and adoption of specific career roles, the issues assume a greater importance than for more globally oriented educative programs.

Stability vs. Change

Change is a pervasive force in all aspects of society, a point made very well by Toffler (1970) and many other authors. In this century the rate of technological advance and change has been so great that we are now suffering from what Michael Marien has called a "knowledge inversion."[1] A great deal of new knowledge, new values, new attitudes, and resulting new occupational roles and life styles is the special province of adolescents and young adults who are not yet mature, educated and wise by conventional chronological age and conferred degree standards. Marien goes on to note that the rapid and major changes in technical knowledge and social behavior

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[1]Personal communication by Michael Marien to the author

have resulted in an "ignorant society." A large portion of that ignorance lies in the more mature, adult and "educated" portion of our population. As adults who hold degrees, licenses, certification or who have contributed to technological advance through personal or cooperate effort we are lulled into believing we are educated. But, says Marien:

> We have created a society that we cannot understand and therefore cannot manage; our ignorance is a basic factor in all of our public problems . . . .
>
> Education, therefore, can no longer be thought of an activity solely confined to the young. The most important learning needs at present are among adults . . . . (Marien, 1973, p. 513)

Marien identifies an area which presents a tremendous problem to educators planning a curriculum designed to direct students to future occupational roles. It is true that some educators of an essentialist educational philosophy bias may not recognize the problem which Marien identifies. There are still many persons who feel that the content of the disciplines they teach or study is some great and absolute truth. Of course this is foolish since the world of conceptual organization and ideas is completely tentative and arbitrary. There is no truth in any conceptual scheme or knowledge organization. There is only functional utility of the knowledge system to categorize events and experience toward communicating to others one's observations, inferences and predictions. A knowledge or conceptual system is true only in that sense that it is isomorphic with empirical, observed phenomena and is high in its denotative meaning to a large number of persons sharing an interest in those phenomena, their categorization, interpretation and manipulation. To the extent

that an organized knowledge system is, at some point, isomorphic with empirically observed events and, in addition, denotes clearly to many people the same meanings and feelings, it is likely to be a useful and worthwhile bit of content for inclusion in a curriculum. It is also likely to help the persons who learn its arbitrary structure to function as effective and rational problem solvers (Staats, 1971). However, like any other invention, gadget or tool, concepts or knowledge systems become outdated. Sooner or later some one else invents a new conceptualization which is more isomorphic with more observed phenomena or events and is more easily understood or comprehended by more people. Thus knowledge structures constantly change. Lately they have been changing very rapidly. As basic knowledge structures change they bring about new ways of responding to and interacting with all aspects of the personal, physical and social environment. Changes in knowledge structures are not limited to how we think about matter and energy, molecules and motion. They also extend to how we think about ourselves, our families and friends, marriage, abortion, war, religion, God, love and work. In short, there is no realm of human activity, individual or social, which is not somehow conceptualized by some arbitrary knowledge system. The way the activity is conceptualized changes constantly over lifetimes and generations either greatly or little depending upon the particular activity and many other factors. The changes in conceptualization cause great changes in human behavior patterns individually and socially, technologically and spiritually. We usually describe these changes by saying the ideals, values, life styles, ethos, technology, economics, standard of living of the culture are changing. We might be

more correct in simply saying the knowledge structures by which the people in the culture think about themselves and their world are changing. The knowledge appears to feed upon itself. Invention and conceptualization fuel what Toffler (1970) calls the "technological engine."

Some scholors advocate a controlled and planned society. They properly see the dangers of a continuation of an ever accelerating rate of change in which the "technological engine" runs wild and completely beyond the control of our "ignorant society." Skinner has long been a proponent for a rational, controlled society. His recent book Beyond Freedom and Dignity (1971) raises anew the question of whether or not we can survive as a culture and species without such control and planning.

It seems unlikely that the rate of knowledge building and technologic change will be controlled by legislation or governmental intervention. Factors more likely to contribute to a reduction in the rate of technologic change in the culture are increasing scarcity of basic energy, mineral and food resources which are also needed to fuel the technological engine. In future centuries our nation and other nations may become more stable and unchanging because there are few basic resources to operationalize the new conceptual knowledge which is invented. Conceptualizing a new technology does not consume nearly as many basic resources as does implementing that technology. Consequently, it is possible that in the future, cultures faced with scarce basic resources may develop norms which view conceptual invention as a dangerous evil which causes ultimate destruction to the physical and ecological environment and expends scarce resources foolishly. There are currently some prototype norms of this nature which have arisen out of concern for environmental pollution and destruction.

Still other scholars see man's technology and his capacity to invent and create as being the solution to all human problems. When gas, oil and coal energy resources are exhausted, man's technology will produce new unlimited energy sources from controlled nuclear fusion or less unlimited but still tremendous energy sources from the sun. For every problem there will be many new solutions which themselves will create new problems which will demand and receive new solutions and so on forever. So reason these scholars who see man's ability to solve and create problems as boundless.

What will the world be like when the children in our elementary schools are adults? Which cultural pattern, unrestricted change or a carefully controlled society, will be predominant? How can we prepare students for occupational roles 15 or 20 years into the future? How can we prepare ourselves to live and function well in that same uncertain future? These are all questions which have significance for designers of career education curricula or any other social programs.

Technology as Master or Servant

One unfortunate pattern of recent knowledge invention and technology is that it has tended to develop an abundance of overspecialized occupational roles. Some of this specialization is evidenced in the jargon of particular fields and occupations. Other evidence exists in the form of common devices and appliances which have come to require special tools and attendants for their care and servicing. Perhaps an example will help. To remove the distributor points on some new automobiles a special cylindrical tool with two prongs on the end is needed. Earlier versions of these automobile distributors had a simple screw and nut which held the distributor points

in place. Nearly every one has a screwdriver and a pair of pliers and could, if they wanted to, remove the points. Few persons have the special tool which is now required to remove the distributor point. Ivan Illich notes that when knowledge specialization, construction of tools and goods and social organization require the common persons to seek out specialists to solve problems he might properly solve himself, the individual is left feeling impotent and dehumanized. Illich suggests that knowledge, technology and social systems ought to have the quality of convivial tools. According to Illich:

> A convivial society should be designed to allow all its members the most autonomous action by means of tools least controlled by others. (Illich, 1973, p. 63)

Illich defines tools broadly. A tool is any mechanical device, social institution or conceptual organization or social convention which produces real or intangible commodities, such as food, electricity, automobiles, education, health, knowledge or decisions.

> Tools foster conviviality to the extent to which they can be used, by anybody, as often or as seldom as desired, for accomplishment of a purpose chosen by the user. The use of such tools by one person does not restrain another from using them equally. They do not require previous certification of the user. Their existence does not impose any obligation to use them. They allow the user to express his meaning in action. (Illich, 1973, p. 63).

Illich gives as examples of convivial tools reading and writing and the telephone. Reading and writing are complex conceptual tools which nearly

everyone in our society learns to use reasonably well. A person can read or write whatever he chooses for whatever purpose whenever he wants. Years ago if a person wanted some of his ideas or feelings encoded into written symbols so that they could be preserved, distributed or sent to a particular person he had to go see a scribe who possessed the necessary encoding skill. If he wanted to read a message from a friend he also had to see the scribe to have the message decoded. Now nearly everyone can write a note to his friend or read a note from his friend all by himself. Reading and writing have become more convivial tools and consequently contribute to the conviviality of society. The telephone, postal system, and personal automobile also convey a greater conviviality to society. These and other tools allow greater personal choice about what one will do, when he will do it, and how he will go about it. Conviviality is increased with a decrease in specialization of training of individuals. Tools designed to be convivial should help combat the "ignorant society" condition in which we find ourselves by allowing each individual more control over his own fate. This in turn should lead to feelings of joy and fulfillment. Overspecialization of tools and society can be expected to lead to regimentation, dependence, exploitation and impotence. Thus, Illich argues, calling for despecialization in our educational and social practices.

Again there are major implications here for career development education. If we are to educate children toward becoming competent, happy, self-controlled adults in world of work roles we must train them broadly in a wide array of convivial skills. They must be able to do as much as they can for themselves. They must be inter- and multi-disciplinary in their thinking.

They must possess a wide array of skills which allow them to seek out and learn how to do what they want to do when they want to do it with minimum dependence upon the skills of any special person or group. A technology built upon the principle of conviviality has potential to further humanize society and enhance personal self-actualization within lifetime career activities. A technology built around superspecialized roles, statuses and occupations will almost certainly denigrate the individual and the institutions of which he is a member.

The benefits of convivial tools have become recognized in industry recently. The efficiency of assembly line procedures has been found to not always be so efficient. The hidden costs of dull, repetitive, narrow, unimaginative production line jobs are boredom, hostility, illness, poor workmanship, drug abuse, violence, absenteeism and many other symptoms which result from dehumanization by improperly used technology. A number of automotive producers, furniture manufacturers and other industrial producers have begun to experiment with training their workers to work across a wide spectrum of roles within the organization. This requires training a much wider range of skills and helps develop a worker more self-respected and competent who is also more adaptive, flexible, motivated and useful to the parent company. In some places assembly lines are giving way to teams of persons who are responsible for all the operations across all phases of production (Rothschild, 1973). In other more radical approaches workers decide when and how much they will work in factories that are open 24 hours a day, seven days a week where workers may come and go as they please, producing as much or as little as they desire. This, of course, is possible only when workers are themselves, or in small groups, responsible for the

complete production of a finished product from start to finish as is the case in constructing a piece of furniture or small aircraft.

Many corporate management training programs for years have required the trainee to work for a time in all the major roles and oeprations performed by the persons the trainee will eventually supervise. This requires the potential manager to learn a very broad array of roles and skills. In short he becomes more convivial by virtue of his extensive and broad training. He is, therefore, a more valuable person to himself and his company. There is no reason to think that managers are born. They are almost certainly made by the cumulative experiences they were fortunate enough to enjoy. There mounts an ever increasing array of evidence from behavioral science that differences among accomplishments of most people are primarily experiential and not genetic. What works for the manager would almost certainly work for the majority of workers who may have become attenuated in their occupational and personal development by being confined to one narrow set of skills and functions.

For years there has been much talk about the pursuit of ultimate meaning, feelings of worth and responsibility through means outside one's occupation. Community activities, church, recreational pursuits and hobbies are all well established ways which are held up to persons as means to self-actualization. It is almost as if whole segments of our population have been encouraged to endure and comply with dehumanizing nonconvivial occupational roles in order that they can find meaning and fulfillment somewhere else. One significant aspect of the CDCP program is that it proposes self-actualization through one's occupational role. This is a grand idea and one not often proposed. Nearly all persons must work at something or other. How wonderful

to increase the probability that persons may find joy and fulfillment in their primary life activity, their occupational role.

Within occupational or career families there are differences in conviviality which are apparent. Again these differences probably result mostly from differential experience. Physicians are trained to higher levels of conviviality within health sciences than are laboratory technicians. Architects likewise have a wider array of career relevant skills than do draftsmen. The difference between a physician and a laboratory technician or an architect and a draftsman is similar to the difference between the plant manager and the assembly line worker. The former individuals have been educated and trained in a wider array of roles and skills than the latter. Consequently they have greater control over their own actions and choices within their careers and less dependence upon others for major decisions. They simply have a wider array of tools available to them that may make them more in control, motivated, responsible, and self-actualized persons within their career activity.

Assuming there is a compelling logic to Illich's arguments toward building a more convivial society what role can education play in this task? What can career development curricula do to promote conviviality in society? Is it reasonable to believe that the educational programs of our schools can effect changes in practices in institutions in which people are employed as adults? Can career development curricula promote conviviality as a valued ideal among students which they will strive toward in their personal career development as young adults?

Who is an Educated Person?

An educated person is a person who can love others. Before he can love others he must respect himself. He must feel confident in and competent about himself and his role in dealing with others. He is also rational, skilled in reasoning, intuitive and analytic thinking. He is compassionate and warm in his interpersonal relationships. He is sensitive, empathetic, and non-ethnocentric. He is an independently motivated life long learner. He is a problem-seeker and solver. He is fluent and flexible in his perceptions, ideas, and feelings. He is curious and an inquirer, an avid gatherer and organizer of information and ideas. He is a coper rather than a defender, an active seeker rather than a passive acceptor. He is a clarifier of his own belief systems and values toward removing dissonance between the ideals he professes and the actions of his daily life. He is a person who continues to grow in wisdom, competence, compassion and reason throughout his lifetime. Maslow (1943, 1962) has described the educated person as have many other thoughtful scholars of human behavior and development before and since (Rubin, 1969, Combs, 1962).

This has long been the ideal of the educated person. This type of educated person is ideally suited to life in a rapidly changing society. Because he is a curious, life long quester, a problem seeker and solver, a perpetual student, a fluent, flexible, adaptive, and creative personality, he both contributes to and thrives on change in his culture. Such an individual has developed a broad array of basic skills which endow him with an unusual degree of conviviality.

In a highly controlled and stable society, which as was noted earlier, is proposed by some scholars, the educated person described above would pose

a threat. He would be viewed as a deviant and undoubtedly would be "treated" to correct his abnormal tendencies. George Orwell describes this type of society in his book Nineteen Eighty Four. In a highly controlled society the educated person is one who has learned his particular social and occupational role well and come to take pride in his contribution toward achieving some great social cause. We would expect thinking and action to be more uniform in such a society as "properly" educated persons would together with passion and zeal toward some widely shared common end goals. We would further expect the social status and personal relationships of members of this society to be clearly and perhaps rigidly defined. The "educated person" in such a society becomes the authoritarian personality who needs to be dominated and to dominate, who is fearful of any person or condition who questions the existing order of knowledge, values or social practice, who defends against change, thinks categorically and is fulfilled only within some great cause prescribed by some external authority who controls his destiny and under whose direction he works, thinks, loves and lives. This type of "educated person" has also been described by many scholars (Rokeach, 1960: Adorno, 1967). In many ways the authoritarian personality is the antithesis of the educated, humanized individual described by Maslow (1943, 1962), Rubin (1969) and Combs (1962).

In reality a given society is never completely open to change or completely controlled. Given societies are interesting mixtures of self-actualized and authoritarian personalities. Both conditions of society and personality types are apparent in our own recent history. The deep involvement of the United States in World War II produced a unification of thinking, action, values, ideals and life styles which may have been unmatched in our previous history. This uniformity of purpose was reflected

in the development of many technical training programs which had as their goals the development of specific competencies for specific industrial and military roles. Thus machinists and military officers, when in great demand, could be trained in a few weeks rather than in the customary pattern of several years of formal training or apprenticeship. Education was reduced for such groups to the bare bones business of training for narrow technical competence. After World War II, and especially after the Korean War, uniformity of national goals and great causes were much less apparent. Divergence of ideals, values, life styles, educations, and occupations has steadily increased to the present. Educated persons of earlier times with more authoritarian personalities who had been taught and who had learned to accept their lot, show great respect for authority, to think stereotypically about themselves and others, to believe in the absolute nature and truth of knowledge in academic and scientific disciplines, and to accept little or no responsibility for their own destiny still made up a large part of the nation's middle class work force. These persons were offended and threatened by the ever increasing divergency in publically expressed values and life styles, and by the questioning of basic goals, values and ideals which began in earnest in the sixties through free speech, civil rights, and black power activists. Thus we see the educated person is determined in large part by the context and times of society in which he lives and the forces which tend to make that society and its institutions dynamic and ever changing or more stable and controlled. It would appear, however, as is the case in biological evolution of species and the principle of natural selection through genetic variation, that the person who is more flexible and adaptable has a definite advantage in any

society over his rigid self-stereotyped, nonadaptive and impotent counterpart.

The implications for career education curricula are again apparent. Students have both differential needs and preferences for particular skills. Furthermore, differential roles in society and different life styles cause certain skills to be of more value and utility to some individuals than to others. Thus, while the profile of the "educated person" may include common characteristics, the emphasis upon certain of those characteristics and the proficiency in their associated skills may be expected to vary across "educated persons." The engineer may be expected to value, emphasize, and show more proficiency in certain subsets of analytic thinking skills than the marriage counselor, who may value, emphasize, and show more proficiency in certain subsets of interpersonal relationship and social perception skills. Both may have proficiency in many common skills, but it is unlikely that their skill profile will be identical in emphasis and degree of proficiency. The differential demands of society, as well as differences in their individual experiences and personalities, insure this. Obviously, both kinds of individuals are needed by society. There is no moral or practical basis for attempting to produce more or fewer engineers or marriage counselors through education. There is, however, a strong moral and practical basis for providing an educational setting where both may develop their special skills according to their preferences and the needs of society and where both may also be assured adequate opportunity to become proficient to some degree in the broad array of skills which characterize the "educated person." Carreer education curricula should, therefore, be designed to develop such wide arrays of skill and not be concerned with "fitting" certain individuals to specific vocations. Given the proper broad array of coping

skills and adequate information about himself and the occupational world the student should be able to "fit" himself to a vocation much better than any counselor. It is important that he be able to do so since he will quite likely have to continue to "fit" himself to changing career opportunities and patterns for the rest of his productive life.

Locus of Motivation

Why do people learn and grow? What is it that makes students and adults persist after remote goals? What is it which motivates people to strive, work, study and play? There are very basic differences in the views various scholars hold about the locus of motivation for human activity. There tend to be two major world views about this topic. One view conceptualizes students, workers or any other group of humans as being naturally passive and inactive unless they are forced to be productive and competent by external rewards. All behavior is considered to be motivated out of the desire of the individual to receive some extrinsic reward which is held out to him by some parent, manager, teacher or other controlling agent. The second major view conceptualizes humans as organisms in quest of experience and its organization. This view holds that humans seek out experience, learn, study, work and play because they derive great intrinsic satisfaction from organizing, understanding and gaining greater control over their environment. These opposing views are reflected in many areas of endeavor.

In his first chapter in The Conditions of Learning, Gagné (1970) points out that the choice of experimental paradigm and experimental organism by American learning theorists has greatly influenced the learning theories

which have been developed. The paradigm has typically required an organism to engage in simple acts for which he is rewarded, non-rewarded or punished by some external manipulator. This type of paradigm has given rise, among psychologists with strict behavioristic orientations, to the notion that organisms including humans are largely passive agents in their environment unless stimulated to action by external controls. Their role as children, students, patients, workers or other members of society is to work for the rewards established by the people who control their destiny, be it parent, teacher, priest, manager, or politician. They are assumed to be motivated primarily by extrinsic contingencies of reinforcement which are managed by others. It is true that under many conditions which have been established experimentally and socially humans, rats, cats, mice and many other organisms can and do act as if they were motivated only by such extrinsic factors. The question which has often been ignored is, "If you starve a rat and then put him in a Skinner box to make him work for his food what else can you expect him to do except to interact with you according to your designs through pushing the bar the way you want and force him to?" If the rat (or man) wants to eat (be rewarded) and the experimenter (parent, teacher, manager) is in complete authority over him, then he must attend to the task, find out what it is his master has in mind for him and perform accordingly. As Bruner (1968) notes the organism may choose to reject the authority of the "experimenter" and defend against doing the task set for him. He certainly will be punished or non-rewarded for such deviance, but he may find great intrinsic satisfaction in resisting the "experimenter" (parent, teacher, manager). Bruner notes this is the case with many students who supposedly have behavioral and learning disorders (1968, Chapter 7).

The rat in his natural environment is a much more complex, interesting, problem solving and self-controlled organism than is the rat in a Skinner box. The work of Konrad Lorenz (1952) and other ethologists in studying the behavior of animals in their natural settings yields a very different view of learning. In their natural habitats animals have tremendous capacity for problem solving and self regulation. Laboratory studies of the cognitive capabilities of animals which have been undertaken are beginning to confirm the hypotheses of field studies of animal behavior (Harlow H. F., Gluck, J. P., & Suomi, S. J. 1972; Rachlin, H. & Green, L., 1972). It would appear that the narrow and restricted experimental paradigms which have been used to study human and animal learning have given rise to oversimplified and mechanistic views of motivation and behavior which are inadequate for interpreting large realms of activity. It may be that the mechanistic behavioristic views of human learning and motivation which have been so prevalent in American psychology have been developed selectively by a society which in large part had already formed a similar view of the nature of human learning and motivation. Most American learning theorists may have been, in fact, busy in the task of designing experiments which would prove what most people and they themselves already accepted as true. Some evidence for this hypothesis can be found in studies of management and educational practices.

Douglas McGregor in his study of management practices in business and industry noted there are two major management comologies. He called these theory X and theory Y. These theories are ways in which managers conceptualize the nature of man and his motivation. Theory X assumes that people are passive, that they must be forced to work or to be productive, to make something of themselves, that they are not responsible and have little self-control. Therefore they must be controlled by authoratative managers

who plan for the employee what is best for him and the company. In opposition, theory Y assumes that the primary motivation for work activity is intrinsic, that people are responsible and capable of self-control, that the interaction of manager and employee is best viewed as a mutual and collaborative problem solving activity toward common goals where both are dependent upon the other and both exert power and influence upon the other (1960). McGregor suggests that most managers have tended to believe theory X and have interacted with the employees they supervise accordingly (1967). Theory X is remarkably like classical American behavioristic learning theory in its assumptions about the nature of man and his motivation. Many teachers, principals and parents have also embraced the assumptions of theory X. Postman and Weingartner (1969), Charles Silberman (1970) and many other observers of the operational patterns of schools show very clearly that students are often perceived as lazy, foolish, irresponsible, incompetent individuals who must somehow be forced to learn enough to approximate becoming human. The problems of this viewpoint and its effects upon students and teachers have been discussed extensively by the author in another document (Cole, 1972).

Where McGregor's theory X is well grounded in the empiricism of behavioristic learning theory, his theory Y is equally as well grounded in the empiricism and much stronger rational-theoretic view of cognitive learning theory. There is overwhelming evidence to believe that man is a quester, that he acts, works, plays and learns not because someone forces him to but because he is naturally equipped to do so and derives pleasure from doing so. Piaget's work contributes greatly to this view. His work is perhaps the most significant of any psychologist of our time in

raising questions and producing formulations about how humans grow and learn. As Hunt (1969, p. 16) notes:

> Piaget's observations and his theorizing provide evidence and conceptions dissonant with the conception prevalent among S - R behavior theorists that organisms, including human beings, tend to be passive and inactive until driven into action by impelling stimulation.

Bruner, through his work in the study of cognition and problem solving is also a major contributor to the view that people seek experience and meaning, not because they are forced by others to do so but because they are forced by the design of their nervous systems to quest to create structure and order in a world of infinite and chaotic stimulus events (Bruner, 1960; Bruner, Olver, & Greenfield, 1966).

Educational practice based upon the assumptions of cognitive learning theory and the motivational theory of Maslow (1943) and Snygg and Combs (1949) has been called process education. The basic difference between process education and more traditional approaches concerns the locus of motivation for human action. McGregor noted in the practice of business and industrial management the cosmological view adopted by the supervisor determines the operational practices he will use. Likewise the bias of curriculum developers and educators toward theory X or theory Y viewpoints of man and his motivation will greatly effect the types of materials, programs and teaching practices prescribed for the classroom. Theory X views fit well with a stable, controlled society where the educated person is the authoritarian personality. Theory Y fits well with an unstable changing society where the educated person is the highly convivial self-actualized individual. Curriculum

materials and programs in career education under theory X assumptions would be prescriptive and designed to socialize certain numbers and types of persons to cerain numbers of clearly specialized and differentiated occupational roles. Change of vocational role would be difficult after initial selection and special training. Career education curricula designed under theory Y views of man would be more truly educative. Rather than being prescriptive they would be informative and utilitarian for the individual. Ideally the career education program of a school would be a valuable tool with great conviviality. It would somehow enable anyone to learn what he needed to about himself and the occupational world so that he might acquire the skills and resources to quest after what interests him most. Ideally this questing activity should be his vocation and his questing should continue life long in that vocation or its career family.

Fidelity vs. Anomy

As a child grows and matures he must develop a belief in something. He must be loyal to some set of ideals and ethics. He must develop a sense of industry and a work ethic which provides him with the motivation to work and results in his feeling he is striving toward his goals through his work activity. Given such a sense of industry and the development of an internalized work ethic the child begins to take pride and joy in his occupational activities. He then becomes a responsible person who, "consistently does his work, contributes his share, and carries his load without being watched or coerced by someone else" (Smart & Smart, 1972, p. 596). Erikson (1963) describes such a person as one who has developed fidelity.

As they become adolescents all youth must develop fidelity to something.

People must come to believe in something which gives purpose and meaning to their existence and life activities. Individuals express their fidelity to the causes they become loyal to in a variety of life activities. Occupational activities are perhaps more important in this "expression of fidelity effect" than many other life activities simply because they persist longer, and are the means to the acquisition of materials, wealth and status which meet basic physiological, emotional and social needs. In short, as an adult, the monetary rewards from one's occupation are the means by which many of the basic needs in the Maslow hierarchy are consistently and adequately met. To the extent that the individual sees his occupational activity as having meaning and purpose within some cause to which he is loyal he will construe his work activity as contributing to advancing his ideals. He will become a happy, accomplished, responsible worker. In terms of the Maslow paradigm, he will fill many of his higher level "being needs" through his occupational or career activities. To the extent that the individual sees his work activities as the means only to meet his basic needs and not to implement his ideals, he will be less happy, enthusiastic, joyful and committed to his occupation. He may continue his work passively, or even grudgingly, seeking to meet the needs of self-actualization in other life activities completely unrelated to his work activity.

Many people follow this pattern and contribute much to their own personal growth and development as well as to the strength of the community through volunteer work in many religious and community organizations. In such cases, the paid occupation of the individual really becomes a secondary occupational role. An example might be the Boy Scout Troop leader who works well, regularly but not over zealously at his 8 to 5 assembly line job at

the local plant for 30 years while devoting nearly all of his creative energy, strength and idealism to teaching, leadership training and program building within the local Scout organization. His secondary occupation, working at the plant, meets his basic financial needs. His primary occupation, for which he receives no pay, meets his needs for vocational activity consistent with his ideals. The present, and probably future, structure of society does not allow all persons gainfully employed to achieve their Maslow being level needs within their paid occupation. There are many legitimate ways in which persons can express or act out their fidelity outside of their 8 to 5 job. We should remember, however, that persons like the scout troop leader also have a strongly developed value system and work ethic. They have simply found ways to express their fidelity outside of their paid occupation. Many great writers, musicians, artists and scientists have operated in similar patterns throughout recorded history.

Sometimes students fail to develop a sense of fidelity to anything. Part of the process of growing up to be a healthy and productive person involves developing a sense of diversity as well as a sense of fidelity. Diversity and fidelity are in opposition, yet they are both needed. As Erikson notes, "Fidelity without a sense of diversity can become an obsession and a bore; diversity without a sense of fidelity, an empty relativism" (1968, p. 42). Too much fidelity and too little diversity leads to the rigid, inflexible authoritarian personality who will advance his cause by any means. Too little fidelity and too much diversity leads to anomy.

Fidelity is being loyal to some set of ideals and building a strong identity by engaging in life activities toward achieving those ideals. Diversity is being skeptical of those ideals and other ideals. It involves questioning basic purposes and assumptions. It results in tolerance for

atypical patterns of values and behavior. It carries within it the potential to deviate in thought, action, life style and vocation from tried and true ways. It is the reason people can be independent, adaptive, inventive and creative. It also causes a person to be less sure about who he is and what his ultimate purpose is. It causes him to question his own ideals, motives and purposes. Diversity, although a necessary and valuable component in personality development, can be destructive. Sidney Mead writes powerfully about this characteristic of diversity in his article "The Lost Dimension and the Age of Longing" (1968, pp. 292-298). Mead points out that many youth in our culture grow up without developing an adequate sense of fidelity. Mead postulates a value vacuum for many of the nation's youth. Where living is easy and basic needs are met questions about the deeper purpose and meaning may become more pressing and urgent. For many maturing young adults for many reasons there is little they can internalize as a grand purpose. For many people God is dead and, notes Mead, for many more who profess belief in God, the shock of realizing that they and their leaders often act and live as if He were dead makes it impossible for them to internalize spiritual ideals and values. In earlier times in this century many people placed their faith in man, his goodness, compassion and competence. But, says Mead, the A bomb was used to wipe out entire cities. Man's competence and creativity has increasingly been turned to the task of destroying life, dignity and property of other men on scales never before witnessed. Thus, man too has fallen from his place of glory. Man can no longer inspire. If many youth cannot believe in God and cannot believe in man what can they believe? What can they learn to value?

Youth long and search for something of value, something of untarnished goodness toward which to express fidelity in order that life may have meaning. Mead argues that many youth fail in this striving. They end up believing in nothing not because they don't want to believe but because they cannot. Without values there is no purpose to any life activity. Alienation and anomy develop. The observations of Mead and others such as Friedenberg (1960; 1965) help us better comprehend why many adolescents who cannot find some productive ideal or cause to become committed to become drop outs, heavy drug users, lifelong drifters or members of a Charlie Mason family.

Problems of fidelity and diversity, alienation and anomy do not end with adolescence. As Rappoport (1972) clearly shows they continue throughout the life span. This may be even more true in the future where rapid cultural change brings about the "knowledge inversion" and necessitates the rethinking and retooling of his career activity by the individual several times in his lifetime.

Again the implications are serious for career development programs. How can a work ethic be developed in school children? What role can the school play in this task? What types of programs and activites are most likely to yield the proper blend of fidelity and diversity needed to develop healthy and productive individuals with strong identities and a strong sense of industry while retaining adequately independent, divergent, tolerant and open attitudes to changing cultural patterns?

General Guidelines for Career Development Curricula

What are some of the major qualities a career development curriculum must have if it is to assist the growth and continued development of individuals in their life long career activities? How does resolution of the basic issues discussed previously logically determine criteria for such programs? Before answering these questions it is necessary to state assumptions which resolve, in part at least, the five major issues discussed in the first portion of this paper.

Assumptions

1. In the future, the rate of change will continue to be very great. Although dwindling resources may force a reduction in the acceleration of change and cause change to be more rational, planned and controlled, it is extremely doubtful that a highly static culture with stable social and occupational roles will emerge. There is simply too much new knowledge and invention currently available from scientific activities in the past decade not to have a tremendous effect in changing human life in major ways in the future. In particular, basic knowledge in the area of genetic manipulation; the biochemistry of learning, memory and aging; studies of controlled nuclear fusion; new data and theories of social organization, group intelligence and behavior of human and non-human species; and major extensions of computer logic and technology all insure an interesting and quite different world in the near future. Life styles, occupations, values, social and political organizations, institutions and any other human endeavors one can conceptualize are likely to be modified, some extensively, others less so.

2. Society can achieve a much greater degree of conviviality where more and more people are freely in command of more and more technical skills, knowledge and any other tools. Increasing conviviality of society will combat individual's feelings of impotence and dehumanization and increase their sense of agency and capacity for destiny control. This will help individuals become more valuable to themselves and their society. Significant trends now occurring in conviviality are apparent. Medicine is becoming more preventative and community oriented. More and more individuals are learning the attitudes, skills and techniques which allow them to be responsible for the nurturance and preservation of their own physical and emotional health rather than to allocate this responsibility to the dentist, physician or psychiatrist. As more and more people are educated to higher and broader degrees ever greater conviviality becomes possible in the general population.

3. The educated person of today and tomorrow is the personality described by Maslow (1943, 1962), Rogers (1961), Rubin (1969) and Cole (1972, p. 10). His profile has been described in a previous section. It will suffice here to say that he is fluent and flexible in his perceptions, feelings and actions while being confident and competent in his identity as a process in transition from his present level of meaning and purpose in existing to ever greater levels. He quests to become more noble and to build a better world. He simultaneously points out and confronts the ever present conflict between ideals and actions, his own and others, toward clarifying the meaning of his life and developing personal and social patterns of behavior consistent with his ideals.

4. People have a great capacity for self-regulated responsible behavior and function best from both a personal and societal standpoint under a system

of intrinsic motivation. This viewpoint is both practical and moral. The opposite viewpoint that people must be forced by others to learn and grow, that they are irresponsible, lazy and only effectively motivated through extrinsic rewards is both immoral and impractical. The latter view leads easily to a dichotomy of specially endowed "god-men" vs. "common men" theory. Jensen's (1969) argument that there are persons functionally capable of only Level I or associative learning while other persons are capable of both Level I learning and Level II or cognitive learning clearly implies a master and slave society where learning ability, power, wealth and feelings of worth would all be controlled through assortative mating within social classes. Jensen's arguments for heritability of intelligence strongly suggests that only through eugenics could one change the capacity of human groups deficient in "g" to become Level II learners. Although Skinner has been a champion for making clear that experience, not genetic endowment, is the primary difference between people (1971, 1972) one sometimes wonders if he does not in fact perceive the whole world as Level I learners. If this is so, who does he see as providing the essential programming to build the planned society he suggests? One cannot help but assume that deep down he too may harbor notions of the programmed and the programmers, the establishers of the contingencies of reinforcement and the manipulated masses. Skinner quite properly points out that society is presently like this in many ways. As I have noted earlier, McGregor reaches similar conclusions about industrial and business management as do Silberman, Postman and Weingartner and others about educational practice. Plato is not the only scholar, behavioral scientist, philosopher, teacher, manager or politician who has proposed a master and slave society.

The immorality of such a view is apparent. It achieves high levels of development of individuals in the ruling class only through insuring the attenuation of the development of others in feelings of worth and dignity, and achievement of economic, social and political well being. The impracticality is also apparent. It leads to defending rather than coping by both groups. It uses energy and resources to maintain the status quo rather than adapt to changing conditions. Given the first assumption about a rapidly changing world such views about motivation are extremely impractical in this day and age.

5. People must develop a value system which provides a basic reference for their decisions and actions. Children must begin to develop a sense of fidelity to some set of ideals. One aspect of this fidelity is a sense of industry or a work ethic. The child must begin to believe that he can express his ideals and beliefs and find joy as well as the means for basic existence in work activity. As he matures he will be most joyful, self-actualized, committed, competent and productive if he continues to grow in his life work activities to patterns of behavior more consistent with his ideals. The changing world and society in which he lives change both his own ideals and the ethos of his culture. He must, therefore, be skilled in the art of constantly questioning and clarifying his values and the normative values of his social groups toward achieving a better consistency between stated ideals and habits or customs of action. He must continually ask himself the questions, "Do you believe what you do?" and "Does doing what you do advance you toward your ideals?" To raise and deal with such questions, to notice discrepancy between stated ideals and everyday patterns of behavior in himself and others he must also develop a strong sense of diversity. Perhaps his major fidelity should be centered around a confidence and excitement in himself and his fellowmen as capable problem

solvers who are engaged on a great quest to learn who they are and what life is about. It is amazing how comfortable and excited young children are in their quest to learn who they are and what life is about. They raise all types of very basic questions and play intently in diverse and imaginative ways to learn more about their environment and themselves. It is equally amazing how a few years later some adults are so certain about who they are and what the meaning of their existence is, how threatened they are about thinking divergently about basic questions of meaning and existence, and how authoritarian, moralistic and prescriptive they become in dealing with their children, students, employees and fellow countrymen. People with too much fidelity and too little diversity are dangerous. In the name of reason, truth and salvation they destroy others emotionally and physically. They fail to realize that one man's salvation is another man's damnation, one man's grand theory another man's iron maiden. Ultimately they dehumanize both themselves and those around them.

Given these assumptions what essential qualities of a career development curriculum can be inferred?

Qualities for Career Development Curricula

Quality 1--A capacity for dealing with change and an acceptance of uncertainty must be fostered. The curriculum should raise many questions about the future and the student's possible roles in that future. It should present many issues to students for possible resolution, e.g. "What is work and what is play and what is the difference between them?" "Why is something which is work for one person play for another?" (Bailey, 1971; Zimmerman & Bailey, 1973). The curriculum should strive to achieve closure

and consensus only on facts and empirical information. It should not encourage uniform concensus or closure on the multiple inferences and generalizations which can be produced from those facts.

Quality 2--A basic fluency and flexibility of perception, feeling, thinking, expression and action should be developed. Curriculum activities should never be designed to give the impression that there is only one way to define a term, to categorize events, people, jobs or ideas or to interpret a given set of empirical observations. Rather the curriculum should present the student with opportunity to reorganize, reclassify and reinterpret concepts, generalizations, methods and stereotypes which are the content of any curriculum. When students are engaged in learning any skill, such as categorizing a group of objects, events, people or jobs by common attributes, they should never be asked to develop only one solution to the problem. They should be encouraged to seek multiple ways to achieve their goal using different methods of categorization. Furthermore if the skill is deemed worth teaching the curriculum should present opportunity for its use in many contexts. If learning to categorize events, situations, conditions, occupational roles, likes and dislikes and objects is an important skill, a wide sample of categorization activities should be designed. Furthermore any given categorization activity ought to be designed such that the student will be forced to examine his choice of attributes, select other attributes and recategorize the array of events, situations, etc. in multiple ways. The activities should also be designed to encourage and allow diversity in the choice of attributes and the subsequent formation of categories across students. The curriculum activities should deliberately be designed to communicate directly to the individual child the different perceptions, assumptions, values and selection of attributes which operate among his peers and cause their categorization to often differ from his

own. This general principle of multiple organization and interpretation applies not only to skills of categorization but most skills such as communication, observing, making inferences, evaluating and persuading others of one's views. The principle can best be implemented by building a basic fluency within each activity in the curriculum. Each individual activity should require and insure a variety of differing but logical responses both within and across students. The practice should extend beyond a given activity as basic skills deemed essential in the curriculum are dealt with in a spiral fashion in new and increasingly diverse and more complex situations as Bruner has suggested (1960, 1967). This principle of curriculum organization is well recognized by many curriculum developers who seek to develop capacity for divergent thinking, problem solving, and expressive behavior (Torrance, 1965; Williams, 1972). It is functionally achieved in a number of exemplary process curricula (Cole, 1969, 1971, 1972). As I have pointed out earlier this does not mean the curriculum should ignore dealing with conventional highly denotative and standard coding systems which are necessary for communication. These systems are perhaps best represented in spelling, vocabulary and word meaning, grammatical construction, mathematical operations, relationships and assumptions which are the basis for much other learning activity. They should be learned convergently but not as the truth. They should essentially become understood by students to be standard but arbitrary ways to represent aspects of reality and to communicate with self and others. Their mastery of these basic tools endows great conviviality upon the individual. However, in most other content of the curriculum, and especially in career development, it is much less necessary and even undesirable to teach for convergence and concensus.

Quality 3--The curriculum must respect the questing, imaginative and playful nature of the child. It should provide activities which insure the retention of the basic motivation to quest for meaning. Torrance (1965) has noted from empirical evidence that excessive concentration of curriculum activities on developing convergency in thinking, interpretation and operation cause a reduction in basic fluency and flexibility of action and thinking. He has referred to this as the fourth grade slump (1968). Many other scholars have noted similar patterns resulting from schooling (Williams, 1968; McKinnon, 1969). The playful questing of the child can perhaps best be fostered if curriculum developers, teachers and parents can themselves remain open to the idea that any process skill organized curriculum need not be overly concerned about the content experiences a given child encounters or fails to encounter. If certain process skills are stated as objectives for a curriculum, if these skills have a good rationale which justifies their selection for attention, then we must take seriously only the opportunity to provide enough specific and varied topics, materials and activities for students to engage in the use of these skills so that they may be internalized, generalized and broadened in the way Piaget describes the process invarients of integration and coordination (Flavell, 1966). With such a process orientation we come to view the content of particular curriculum activities and topics as a sample of perhaps an infinite array of content which serves as a vehicle in developing the skills which are the stated outcomes. We begin to stop being overly concerned with whether or not all students have mastered particular content or concepts. The content of the curriculum becomes less of a sacred cow and the curriculum designer, teacher and

student are all much more free to play within a wide array of topics. It becomes an impossible task to teach for mastery of all content. It demoralizes students and teachers. There is simply too much to learn and too little reason for learning all that is known. It becomes much more possible, exciting and efficient to develop skills which enable one to know when he wants to know, what he needs and wants to know. Most of the knowledge which is taught in classrooms is information pure and simple. Most of the learning which students are required to do is the memorization of this information and its relationships to other information. Information is available from many sources. It is stored in many places. The skills to render data (information) meaningful and useful in meeting one's needs, in questing and problem solving, are not stored in libraries and other places. They are the strategies which are learned over time by competent individuals. Such process skills or strategies lead to the wise and powerful use of information. Such skills are the most basic foundation for decision making.

Quality 4--The curriculum must provide the student with many opportunities for him to be successful in solving problems, in clarifying his own values and meanings and in recognizing ambiguities and ambivalence in his own beliefs and beliefs of others. It must develop the understanding that it is natural and normal to raise basic questions about one's purpose and ideals. It must somehow develop a self-confidence in the student. He must come to feel that he is an adequate reasoner, that he is equipped with the means to interpret situations in his life productively and adaptively. The curriculum must present numerous opportunities for him to test his speculations and solutions to problems to determine the consequences. For example, in junior high school, students might explore their own views

about the amount of control and freedom they desire for themselves in their career activities. A number of curriculum activities could be designed for them to test the adequacy of their formulations about themselves. They might list the recent accomplichments of which they are most proud. They might examine and discuss the reasons they strived toward and completed those accomplishments. They might examine the methods of influence they use on their brothers, sisters, parents and peers as outlined in certain SRA Social Science Laboratory Unit exercises. They might also examine the types of control and influence other people use on them and think about and explain how they respond to each of the five types of control commonly used. Activities of this type could be extremely useful in helping the student understand himself and what type of life activites in a career family appeal to him or offend him. He should have the opportunity to translate some of this newly acquired information about himself into choices of roles he wishes to play in short classroom activities and projects. Curriculum materials like the MATCH units (Cole, 1972; Seferian & Cole, 1970) provide excellent opportunities for such exploration. If possible the curriculum should provide opportunities and activities for the student to conduct further testing of his views about himself and others in non-school contexts.

Quality 5--The curriculum must broadly inform the student about the diversity of beliefs, roles and responsibilities in career activities of people. It should bring him in contact from early elementary years through high school years with a variety of persons who are currently working out their ideals and meeting their basic economic needs in their occupations. It should inform the student of the role expectations which define the

privileges and responsibilities of various occupational roles within career categories. It should provide the student with the means to categorize different occupational activities as being alike and different in the services and products rendered and the statuses, rewards and sense of agency achieved. It should develop the capacity of the student to seek out and explore multiple ways in which he may meet his basic economic needs and his being needs through tentative planning for career development within a given occupational family or across several related occupational activities. The curriculum designer for career development should recognize that much significant learning cannot and should not be confined to the classroom. As DeCarlo (1969) notes, most significant learning of this type occurs outside the classroom in the student's city and territory. To the extent that it is possible, the career development curriculum designer should incorporate and build upon other community activities and programs which allow students to test themselves in a variety of temporary work roles which involve supervision of others and being supervised by others. All of these activities should be designed to achieve the likelihood that the student will take an active interest in his own career development and achieve a capacity to perceive multiple routes to meet his goals. These outcomes would result in a sense of agency.

Quality 6--The activities in a career development curriculum must develop a child's capacity for tolerance, compassion and empathy. As Piaget and Kohlberg have pointed out the process of maturing as a moral person is life long (Stephens, 1967). An important aspect of development from childhood into adolescence is the transition from "moral realism" to "moral relativism" according to Piaget (Flavell, 1966). In some respects the child in middle childhood is like the authoritarian personality. He

sees issues of right and wrong, good and evil in a categorical framework without the ability to recognize other factors which confound the issues. He lacks empathy and the ability to conceptually reverse roles with an adversary. Consequently he can comprehend no view but his own and can only categorically reject the idea, value, or behavior of someone who offends him. He sees the offender as wrong in an absolute way. In the development of moral and responsible behavior the child learns to be more relativistic in his reasoning about good and bad, right and wrong. He begins to understand how the context of given situations determine if a given act is more or less appropriate. He develops the conceptual and emotive ability to put himself in the place of a person he disagrees with. This is best defined as the ability to adopt other roles, to empathize with others toward better comprehending why people behave as they do in given situations. Stephens (1967) points out that some people never develop fully their moral capacity for tolerance and understanding.

A good deal of the ability of the child to develop to such a level is probably a function of the child rearing procedures used with him by his parents and teachers. Singer and Singer (1969) present interesting generalizations based on empirical observations and studies which indicate that loving and permissive parents produce children who develop these types of moral characteristics as well as a self-reliant, creative personality. Hostile restrictive parents tend to develop fearful, anxious self-destructive children. Hostile permissive parents tend to develop children with strong identities who are self-reliant but are outerly agressive, hostile and socially destructive. Warm permissive parents tend to develop children who are anxious, overcontrolled, achievement oriented and conforming. Although

Singer and Singer make these generalizations primarily about the child rearing practices of parents, it appears that teachers also can be globally categorized into one of the four quadrants of the two dimensional paradigm for child rearing. It seems clear that the type of creative, self-motivated, responsible and moral person called for as the product of career development curricula is best socialized through the warm-permissive dimension. The career development curriculum should probably be designed to foster such an atmosphere. The teacher, of course, must also adopt such a view and implement it if the curriculum is to achieve this goal. A curriculum designed to be warm and permissive toward students does not mean there would be no structure and planning. On the contrary, there should be a great deal of structure and great planning, much more so than in a typical narrow prescriptive program which needs to plan for and carry out only one set of activities for all children for each lesson. It would simply mean that the people who develop the curriculum activities and the teachers must have a basic and strong feeling of interpersonal regard for students. In addition as they plan activities to develop the skills, which are stated as outcomes, a great deal of planning and structuring must take place. The curriculum should be permissive through offering the child guidance toward developing skills and competencies through allowing him great choice in the particular content, tasks, and activities he will select. The child should be largely free to select the means by which he will practice the skill. The situation is similar to a properly operated Montessori preschool where there is great structure and planning evident in the curriculum, but tremendous freedom of option and choice by students (Montessori, 1965).

A capacity for tolerance, compassion and empathy probably contribute more to a person's ability to interact productively with his peers than any other set of skills. This set of basic skills is the cement which

holds the matrix of any social organization together. The ability of a person to get along with others, to understand their acts and motives, to empathize with their feelings and values is probably more important in one's occupational role than in any other social situation with, perhaps, the exception of one's immediate family. Career development curricula should incorporate many activities which foster the capacity for interpersonal regard. Again the SRA Social Science Laboratory units provide a number of activities which are designed toward such ends. Curriculum activities should include a large number of well designed activities which allow children to adopt others' roles and viewpoints and explore their interpretations of the motives and actions of the persons in these roles.

Quality 7--The curriculum must help the child find ways to contribute meaningfully to the welfare of some group. There are currently more children who would like to deliver papers than paper routes in many neighborhoods. Increased specialization and years of formal education have prolonged the period of economic dependence of children upon their parents. Many children have difficulty feeling that anything they do contributes in a significant way to the welfare of their family or community. Children, as all people, want to count for something. They want to be competent in some things and esteemed for their contribution. Some children satisfy these needs through their schoolwork and school and community activities. Many other children fail to see the relevance of such activities to anything of significance or worth. Some encounter this problem at grade three, many others in junior high, high school and some later. Minimally the career development curriculum should provide ample opportunity for these feelings of anomy and purposelessness to be shared, examined and discussed. These are powerful feelings experienced by most people sometime in their lives.

They need not be viewed as abnormal or improper. There is no need to believe that children should accept trite answers as to the ultimate purpose of their doing their homework, getting an A, mowing the lawn, working for a merit badge in Scouts or going to college. Children should be aware that all persons experience such feelings. They should have the opportunity to explore with others in various later stages of career development, the problems these people have encountered, and how they have or have not solved them.

At best, activities in a career development curriculum should provide the means for students to generate ways and outlets for the contribution of their talents to some constructive cause, to explore and seek out ways to express fidelity. This is an acute problem. Bruner calls it the conflict between social and personal relevance (1968). He notes that, unfortunately, most of the curriculum which is perceived as being of great social relevance by educators and parents is at the same time perceived as being of little personal relevance by students. A career development curriculum could provide the means for students, teachers and community leaders to deal with and attempt to continuously resolve this issue. It is an issue one can almost always rally a group of students to rap about. It is an issue which has no ultimate resolution. It is also an issue which continues life long in one's career activities and is well worth being equipped to think about and deal with. Once again it is the process for dealing with and adaptively resolving such conflict between personal meaning and goals and social-organizational missions which should be the goal of instruction. It is <u>not</u> the convincing of the student or employee that the social relevance of his studying or working <u>must</u> have personal relevance for him because it is decreed somewhere by some great authority

or principle.

These, then, are the basic qualities which career development curricula must meet if they are to be consistent with the basic issues faced by our society in educating youth toward productive occupational roles. They are deliberately broader in scope than the usual approach which chooses to present the student with information about the economic aspects of various occupations and think about what he would like to do when he grows up.

Design Principles for Career Development Curricula

The basic principles of curriculum design for career development curricula are like those for most other programs. Many of these principles have evolved out of major curriculum building and reform activities which occurred in the 1960's and are still underway. The principles stated here are based in part on the author's work in the study of curriculum design and validation carried out at the Eastern Regional Institute for Education (ERIE). Some of this work is reported in Research into Process Curricula volume I (Cole, 1970) and Process Education (Cole, 1972). The principles set forth here are also based in large part on the recent work of many other curriculum developers and theorists.

Principle 1

The social purpose and utility of the curriculum as well as its value to the individual student should be clearly stated and based in some logical-theoretical framework. A rationale which justifies the expense and effort of instruction in the content of the curriculum should be well developed.

A clear statement of the values which the curriculum espouses should be prepared and be available for examination by prospective client administrators, teachers, parents and students. The statement of rationale should probably deal with basic issues such as were discussed in the first portion of this paper. The assumptions the program developers choose to make within the context of those issues should be clearly identified. The logic of the choice of assumptions should be presented.

Principle 2

The structure and organization of the curriculum should be based on some overall paradigm which recognizes the developmental capabilities, interests and limitations of students at various levels. The paradigm for the overall structure and organization should also have functional utility for generating a variety of learning activities, topics and materials to be used to meet program objectives. The organization and sequencing of activities, topics and the design of materials should be based upon some commonly empirically understood and/or theoretically conceptualized theory of learning and development. For example, a curriculum in career development might be organized in a manner suggested by Gagne' (1970). First the curriculum developers would study persons successful in their career building activity. They would examine people in various careers at various levels of development and attempt to infer the types of skills which are most common and most useful in making career decisions toward achieving satisfaction with one's self and one's work. They would then attempt to produce a learning hierarchy of skills and perhaps attitudes and motives. The question which would be asked is, "What skills, knowledges, feelings, attitudes or other competencies must a person have before he

can exhibit a particular terminal skill viewed as essential to successful career development?" An example terminal skill might be "interpersonal regard toward peers, superiors and subordinates in occupational roles." Thus the structure of the curriculum and the learning activities, topics and materials would be generated and selected to develop certain skills believed to be prerequisite to other more advanced skills. In selecting particular activities and topics appropriate for primary grades simple conceptions of cumulative learning according to Gagne's theory would not be enough. Knowledge of the developmental characteristics of children's thought, speech, actions and interests would greatly contribute and modify the types of activities, topics and materials finally selected or generated.

Another approach might be to specify the cognitive and social characteristics of children as determined by developmental psychology. Piaget's cognitive developmental categorization of children, the work of Bruner or many others might be used as a basis for the program structure. Here the approach would not be a task analysis of the terminal skills to determine a learning hierarchy but a series of developmental tasks which children need to master before being able to cope with activities, choices and problems at a higher and more complex level.

In practice there are some excellent curricula which have used both approaches. The AAAS Science: A Process Approach curriculum was developed according to the theory of cumulative learning and behavioral task analysis of the terminal skills hypothesized as being used by scientists to explore the world. The book Piaget's Theory Applied to an Early Childhood Curriculum and associated curriculum materials adopts the latter approach to curriculum design (Lavatelli, 1970). The Man: A Course of Study Program is based very centrally upon the theory and empirical developmental psychology studies

of Bruner, his colleagues and students (Bruner, 1960, 1967; Bruner, Olver & Greenfield, 1966). The Resnick (1967) early learning curriculum is based on a combination of both cumulative learning toward process skills learning hierarchy approach and developmental psychology theory.[1] All of these curricula are aided tremendously in the design of their materials and activities and their achievement of objectives through having a rational and consistent theoretic basis. Any curriculum should have some such identified and organized basis in the psychology of learning and development; most do not. (Cole & Seferian, 1970).

Principle 3

The curriculum should have stated objectives. These should be of several types. First there should be broadly stated objectives which are designed to convey the general intent and purpose of the curriculum to teachers, students and parents. There should be relatively few of these objectives. Their purpose is primarily to inform and influence. They should reflect and be consistent with statements which describe the program's values and assumptions about basic issues. The second type of objectives should be greater in number and specificity. They should define areas of

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[1]The Career Development for Children Project is quite strong in this principle. It is based more on a developmental task-cognitive stages approach than a cumulative learning hierarchy viewpoint (Bailey 1971, 1973). Vinacke's interpretations of the developmental characteristics of children are used to justify the organization of various tasks. The influence of Piaget's theory is also apparent. The notion of spiral curriculum design advanced by Bruner is also incorporated. Relationships between broad and specific objectives reflect something of a cumulative learning task analysis approach.

competence, perhaps as in clusters of process skills which are quite performance specific but situation generalizable. The third type of objectives should be large in number and quite highly performance and somewhat more situation specific. They should be viewed as a sample of a given number of possible objectives within a universe of acts or performances which might reasonably be inferred to foster the intermediate and general objectives. Perhaps an example will help.

Suppose a career development curriculum had as one of its broad objectives "the development of the individual's capacity to show interpersonal regard and empathy for his peers, superiors and subordinates in social task oriented (work) settings." An intermediate objective might be, "The student shows respect for others." Another intermediate objective might be, "The student can adopt and role play the role of a peer, superior or subordinate and adopt the feelings, mannerisms and actions normal to that role in resolving a given issue." There are many other intermediate objectives which could be stated. Let us, however, continue with the one which concerns showing respect for others. The curriculum designer must ask himself what are some ways in which people show respect for others. He can look around him, watch people, think reflectively and gather information from other people toward beginning to list a number of specific activities which indicate respect for others. Some of the activities he might list could be sharing, listening, helping, waiting for and being patient with others, caring for property of others, complimenting others, being tactful, asking others for their opinions or advice and so on. He can, armed with his list, begin to conceptualize, identify and select a multiple but finite set of activities, topics, situations and materials for instruction which allow these specific

performances (skill) to be engaged in. He can further separate and refine the activities to make them more appropriate from a developmental psychology standpoint and a prerequisite learning standpoint if he wishes. Thus he may generate an entire series of activities within a given curriculum lesson which illustrate and provide opportunity for practicing the skill. He can also stage later lessons for the further practice and generalization of the skill in new and more complex contexts. Again an example may help clarify this.

Suppose "sharing" is one area of activity which the curriculum designer feels is particularly important to developing the intermediate goal of "respect for others." He may then generate a whole list of sharing activities. First he may ask himself what things should or do people share with one another when they respect each other? He might list ideas, friends, feelings, food, experiences, fears, material objects and tools such as crayons, scissors, money, wheelbarrows, ladders, and concepts. The curriculum designer might then decide to construct n number of lessons at the primary, intermediate, junior high and high school level around the topic (or skill) of sharing. He could choose within a given age level those activities involving sharing which are most relevant, of interest and likely to be carried out with enthusiasm by children. Within the context of a particular lesson he might want to arrange for children to examine the advantages and disadvantages of sharing and engage in and experience actual sharing activity in multiple ways. Thus lessons at the primary level might involve sharing crayons, food, time (as in which to show and tell about something one has or has done when everyone wants to talk and there is only a limited time), feelings and friends. Later activities might be more concerned with sharing ideas, observations, and inferences. Upper elementary and junior high activities should continue with activities related to sharing feelings, friends, ideas, information

and perhaps begin to place more emphasis upon sharing influence, responsibility, worries and concerns, and classroom-cooperate-community resources and services. Each activity would be different depending upon the age level characteristics of the children. An activity built around sharing food would be quite different from 2nd grade to 9th grade.

It is very important that a curriculum have such a network of logically related objectives. Recent emphasis upon behavioral objectives, while being very useful in many respects, has also been damaging to curriculum design by some. One widely known advocate of behavioral objectives developed a project where teachers in given curriculum areas simply wrote as many specific behavioral objectives as they could, without any kind of reference framework in broader goals or purposes. This is indeed a foolish task since there are an infinity of precisely stated behavioral objectives for any content area of a curriculum. Logically and practically, however, there are usually only a few generalizable skills which are the purpose of the curriculum in the first place. If the curriculum designer attends not at all to these broad outcomes and ideals, but only writes very precise behavioral objectives and designs the curriculum around these he usually ends up being victimized by his own technology.

Another common error that some behavioral objectives advocates have made is to promote the idea that, "If you can't state it in behavioral terms, throw it out! This is also foolish. Nothing can be stated in absolute behavioral terms. The types of acts specified as outcomes by behavioral objectives are only partially observable. Much of the behavior which produces the product of performance is unobservable. As Gagné (1970) notes it is more appropriate to speak of behavioral objectives as performance objectives.

Such objectives always call for the person to perform some action or series of actions or create some product. We judge the adequacy of his learning not by observable behaviors (movement of muscles, changes in enzymes and hormone levels in tissues and cells) but by his performance which is a compendium of many different behaviors. In fact, different behaviors may often be used by the student to produce the sample product. An example is when a student subtracts 9 from 23 by recalling 23 - 9 = 14, or by thinking 23 - 10 = 13 and 9 is one less than 10 so 23 - 9 must equal 14, or by counting on his fingers, or by thinking, 20 - 9 = 11 and 3 extra are 14. His behaviors are different in each case. The product is the same. The curriculum designer who writes an objective which says, Given the relationship 23 - 9 = ? the student shall produce with 100% accuracy the correct answer which is 14, and who thinks this is behaviorally specific is fooling himself. It is somewhat performance specific, is product specific but most definitely behaviorally ambiguous. A more appropriately stated performance objective which recognizes the diverse behaviors and routes to determine the mathematical differences between numbers would be, "Given any combination of one or two digit numbers or the real objects the symbols represent, the student should be able to accurately determine the difference in quantity between the greater and lesser value (number). Furthermore he should be able to do so by several alternative methods which he can explain and demonstrate and which all yield the same answer." Now with this objective and information about the basic mathematical properties of number systems an entire series of lessons can be designed and taught around this performance objective.

Another common error which some behavioral objective advocates make

is thinking that broad goals can be achieved simply by translating the broad goal into one specific performance objective. Let me provide another example. Supposing we began with the broad objective suggested earlier as appropriate for a career development curriculum. This broad objective was "interpersonal regard and empathy toward one's peers, superiors, and subordinates." Suppose we followed the suggestion of some helpful educational psychologists who tell us to narrow this down to one intermediate type of behavior. Let us select again "sharing." Suppose we further narrow this down by operationally deciding what it is which can be shared. We decide it is crayons. Now we write a "behavioral" objective for elementary school level students as follows. "Given a coloring task and too few crayons and colors in the possession of any one student to complete the task, individual students will share with one another their few individual crayons enabling all students to complete the task with many crayons of many colors." This is a reasonably good objective. It has meaning and relevance within the broader objective from which it was derived. It is operational and logically appropriate. However, having generated this one objective and designed one, two, five or fifteen lessons about the specific activity of sharing crayons cannot be assumed to have met the broad objective or even greatly generalized the skill of sharing!

There are in existence books and training materials and films for teachers which suggest that one need only go through such a procedure to achieve instant success in meeting all those noble goals for students. Nowhere, in some of these materials, is it suggested that the process of narrowing down the broad goal must be engaged in again and again: That these multiple intermediate goals must be in turn each narrowed down again and again: That one ends up with a whole large number of intermediate objectives concerned with interpersonal regard, not just sharing, and that each

intermediate objective generates a whole host of specific objectives, not just sharing crayons, but sharing many other things as well. Unbelievably, some of these experts deliberately communicate to teachers the idea that if you "narrow down" interpersonal regard and empathy to "sharing" and sharing to "sharing crayons" and develop crayon sharing activities you will have replaced ambiguous and largely worthless goals ("interpersonal regard" and "sharing") with good operational, achievable, measurable goals. After all, anyone can determine if a student shares his crayons. The tragedy is that many teachers and some curriculum designers practice this nonsense. The resultant curriculum designs are activities concerned with sharing crayons, sorting squares from circles, making straight lines and curved lines, reciting lists of words, naming major job categories, etc.,all of which may be appropriate activities, most of which have little logical relationship to one another and collectively which have little promise of enhancing any generalizable concepts, competencies or skills. I have deliberately chosen not to reference the works of educational psychologists who have produced such foolish advice. This is not out of concern for embarassing them. They deserve to be embarrassed and worse. Perhaps failing to reference them will help prevent any further dissemination of their foolishness.

Perhaps the frenzy and fanaticism with which some educators have approached converting the world to their new found religion of behavioral objectives is based in an inadequacy in their own personalities to deal with uncertainty. Thus it has become for them a new and rigid fundamentalism which if practiced in its narrow sense seems certain to make the curriculum even less personally and socially relevant.

Performance objectives are powerful
tools.
They are thought to be noble only
by fools!

Used properly they help one to know
How to insure that great ideals
Can be apprehended and used
Toward doing that
Which needs be done
Joyfully and with zest
By almost anyone.

They are not a way
To avoid the deeper meanings
Of existence and purpose.
There is no escape from
asking "why?"
No technique to banish uncertainty
and doubt.
Questing for meaning and morality!
That's what life's about.

Principle 4

The content of a curriculum must consist of a wide array of multiple activities, materials and topics both within given smaller units of its content and across its total program. To the extent that a curriculum has a proper logical-theoretic basis and a set of appropriate broad objectives and multiple logically derived intermediate and specific objectives it is possible to achieve such a wide array of topics, materials and activities as the content of the curriculum. To the extent that the broad and intermediate goals are generalizable skills, strategies or processes for dealing with aspects of problem solving and coping behavior, the array of possible activities, topics and materials becomes wider and the choice of particular content less crucial.

There are at least four reasons why a curriculum should contain such a wide variety of materials, topics and activities.

1. The generalization of concepts and skills is best achieved if those concepts and skills are shown to be and experienced as useful and

applicable in a wide array of situations which differ in many ways. This is how concepts and skills are naturally internalized and come to be generalizable in their application (Elkind & Flavell, 1969). Piaget's process invariants of assimilation, accomodation, coordination and integration are based upon such multiple expressions and experiences of concept systems and skills (schemata). Bruner's (1960, 1968) notion of the development of meaning and conceptualization through building structure and "going beyond the information given" by capitalizing upon redundancy in perceptual-cognitive patterns of an ever changing world is still another recognition of how learning of concepts and skills occurs. Gagné's (1970) notion of vertical and especially horizontal transfer of training as well as stimulus and response generalization in development of intellectual skills is a third formulation which recognizes the same phenomena by which concepts and skills are learned, internalized and applied. If a skill or concept is to be well learned and internalized, if it is to have great utility in as yet unencountered future situations, it must be learned through a set of diverse activities and experiences.

2. Multiple sets of activities, topics and materials organized as a means to achieve certain goals provide students with many options. Students may exercise choice. They may make decisions about how they choose to define and extend the limits of a concept or to test the strength of a strategy or skill. This is the essence of individualized instruction, not the usual individually prescribed instruction approach where the only individualization is of learning rate. Most individualized learning programs provide for less individualization. Typically all students follow the same route through the program, do the same things in the same sequence, being allowed individuality only in how fast they choose to go. Individualization should offer more choice than for different rates of learning. It should offer choice for topics studied, materials used and activities in which students are engaged.

3. The assembly of multiple sets of topics, activities and materials for given lessons and units of a curriculum which are all concerned with promoting the same concepts or skills produces an array of situational test items. Any given topic, activity or set of materials which are designed for use in learning activities can be set aside to be used to pretest or post-test student competence. The instructional activities and tasks are no different from the test task and activities in a properly designed curriculum. They are all learning activities designed to develop competence toward certain concepts and skills. Some subsample of these can simply be reserved for pretesting to diagnose for the student and the teacher, the students level of competence in a given area at a given time. Depending upon the diagnosis the student may or may not need to have additional experience in generalizing and internalizing a particular concept or skill. Suppose "sharing" is the skill

of interest. Perhaps he already shares very well in nearly all situations. He needs, therefore, not to be further instructed in sharing skills. He perhaps needs instruction in "accepting responsibility skills." Diagnostic tests provide the student and the teacher with information important in making decisions about what to do next in the progression of career development decisions. This is not unlike the process the student will be engaged in as an adult worker.

Other tasks can be reserved to measure the growth in concepts and skills of the student after he has participated in n learning activities. The completion of the test task is itself instructive since it provides one more situation in which the student can generalize his skills or concepts.

4. Variation in the topics, activities and materials of a curriculum combats habituation and stimulates motivation and attending behavior. The wider and more diverse the activities, topics, materials and media of instruction are within a common core of concept or skill objectives the more interesting the program will be. This was a design principle often ignored by early training films and pen and pencil linear learning programs. Both were equally adept at often putting even normally motivated and interested learners into a near state of sleep. Berlyne hypothesizes on the basis of many experimental studies that a lack of variation in stimulation in an environment leads to a reduction of arousal and ultimately to sleep. A stimulating, varied environment leads to exploratory and questing behavior (Berlyne 1960, 1963).

Again excellent examples of curricula which meet this design criteria are the AAAS Science: A Process Approach curriculum and the Man: A Course of Study program. Others which are additional good examples are the Elementary Science Study Units, MATCH units and the Science Curriculum Improvement Study program. When properly used the good motivational effects of these programs on students is very apparent as has been documented in various evaluations.

Principle 5

The curriculum should include a teacher education component. If the curriculum is a major program which spans multiple grade levels and which is expected to be widely disseminated the teacher education program should necessarily be more complete. The methods, techniques and content of the teacher education program should be consistent with the curriculum organization,

content and value orientation. The teacher education program is itself a curriculum and it too ideally should meet the design principles which have been stated previously.

To the extent that the curriculum requires extensive teacher education activities the agencies and persons who usually train teachers must eventually become involved in the training if the curriculum is to be widely disseminated. Suggestions and guidelines for involvement of such groups in teacher training activities are provided in numerous sources (Cole, 1972; Cole & Herlihy, 1971; Havelock 1969, 1970).

Principle 6

The curriculum should be evaluated during its development, its trial utilization and its dissemination. Evaluation should be largely formative in nature with summative evaluation occurring periodically to determine how effective components of the program are in meeting certain objectives. Procedures for conducting formative and summative evaluation are well outlined in a number of recent sources.

Formative evaluation is the process of making rational decisions about how to design and implement a new curriculum or program to meet specified broad, intermediate and specific goals. Summative evaluation is the determination of how well certain aspects of the curriculum (learning activities, topics, materials, etc.) are functioning in meeting these stated objectives. Summative evaluation should also and ultimately always does, include "goal free evaluation" where the outcomes and effects of the curriculum are examined against the goals of many other groups which may not be the same as those of the program developers. A paper which summarizes

and explains in greater detail the procedures of formative, summative and "goal free" evaluation is "Evaluation of Experiential Education Programs" (Cole, 1972). This paper reviews and presents some of the recent thinking about these aspects of curriculum evaluation.

Not only must the instructional products, materials, and methods of a curriculum be evaluated, the procedures, tactics and plans for disseminating and implementing the program must also be formatively evaluated if the curriculum is to become widely used and adopted. Some general procedures for these activities are contained in "Guidelines for Project Design, Implementation, Monitoring and Evaluation" (Cole & Herlihy, 1971).

Procedures for the formative and summative evaluation of the instructional materials and methods of a curriculum as well as the teacher education program and dissemination and installation plans should all be clearly established and followed throughout the design and implementation of any major curriculum.

Principle 7

The curriculum should be exportable and replicable if it is to be widely useful and influential. This is a design principle which is often not met by programs which may be excellent in attention to other principles (Cole 1970, 1972). If a curriculum depends upon the presence of a given individual for its proper use it will be very limited in its use. Likewise, if it depends on special and unusual materials which are not generally available or which cannot be made easily available at moderate cost it will also be quite restricted in its dissemination.

Existing curriculum materials can be categorized into three general groups. One group consists of extensive sets of activities, topics and physical equipment organized in some sequence. A second group consists

of teacher education strategies and no physical materials. Programs of this second type seek to cause changes in the way the teacher uses the content and materials which presently comprise the curriculum. Often no new materials are needed, but rather new ways to use the existing materials and new roles for teachers and students within the learning activities centered around those generally available materials and topics. A third type of curriculum materials are short duration, well organized and defined instructional packages. Examples would be the MATCH units or specific classroom gaming activities which come in a kit and include all the materials and instructions for use. These various types of curricula have the ability to communicate to teachers and students different types of information. Probably a major curriculum design should include all three types.

The finished curriculum package should be well defined and packaged. It should include a body of available materials for use in learning activities with students, identified topics of study, instructions and suggestions for the use, further organization, adaptation and generation of materials, topics and activities to meet the stated objectives, and procedures for evaluating student progress toward those objectives. As noted previously, there must also be instructional and training materials for teachers which develop proficient and flexible use of the curriculum materials to meet local needs and capitalize on local resources. A paper which deals with some of these properties of curriculum materials and procedures for the logical validation of given existing curriculum procedures, materials and components against broad program goals is "Exemplary Curricula as Vehicles for Facilitating Creativity" (Cole, 1970).

These general principles of curriculum design will help insure a product likely to be worthwhile and functionally installable in many schools.

Logical Validity of the CDCP Paradigm

The previous issues, qualities and principles concerning curriculum design may provide a useful framework from which to examine the logical validity of the CDCP paradigm as well as other career education programs. Time does not presently permit the author to complete an extensive and detailed analysis of the CDCP paradigm against this framework.

It is apparent that the CDCP paradigm does meet most of the suggested criteria quite well in its present stage of formulation. It builds upon and extends the fundamental conceptions of career development and career maturity which have been in development through the work of Parsons, Ginzberg, Super, and Crites. The program perhaps goes beyond this earlier work in proposing that career education has a dual role of helping individuals toward a Maslovian achievement of being needs within the context of doing work which is socially meaningful and productive. CDCP has a definite "growth and development of self-thrust" which is often lacking in programs more impersonally concerned with producing workers for a strong economy. Because of this rooting in historically evolving concepts and ideals the long range outcomes its programs and materials produce should be quite easily and appropriately evaluated in a summative way through presently available instruments and procedures as suggested by Crites (1973).

The program in both its supporting rationale documents and its prototype learning activities does convey quite clearly its assumptions and values about most of the major issues which have been discussed. In large measure those assumptions are similar to the ones which have been presented in this paper and logically defended. The rationale and the paradigm for

the program appear to be directed toward and capable of meeting the qualities suggested as basic for a sound career development curriculum.

The CDCP paradigm meets well the design principle of logical-theoretic framework to justify its effort. It meets even better the second principle which calls for a structure and organization of the curriculum within some empirical-logical-theoretical framework of developmental psychology and learning theory. The program also has broad objectives with stated rationales and appears to have sampled appropriate numbers of specific objectives for use in generating and designing instructional activities and materials and sampling topics for study. The program could be stronger in generating and perhaps better relating some specific objectives to major goals at some points but it generally approximates this ideal much better than most curricula.

The program could better meet the design principle of having a wider array of topics, materials and activities within given levels designed to achieve stated competencies. The prototype curriculum materials are fairly broad and varied and begin to meet this criterion. The curriculum generation paradigm seems capable of fostering such diversity in instructional materials designs. It can be presumed that as more development work is completed the program will be strngthened in this respect. One procedure which might help achieve more diversity in instructional materials and activities while also building a better logical relationship between broad, intermediate and specific objectives is the translation and reorganization of the six domains of behavior (Bailey, 1973, p. 7) into process skill categories. These are essentially process skills now but could perhaps be better expressed as clusters of skills. For example "concepts of self"

might be translated into "knowing self", "liking self", "feeling esteemed", "being loved", "inferring self" or whatever other skills are generally thought to be involved in nurturing strong self concepts. "Information Processing Skills" might be translated into "gathering or seeking information", "organizing information", "using information to make decisions", "observing and inferring information", etc.

The program cannot, of course, fully meet design principles 5, 6 and 7 at this time since it is still in the planning and prototype development stage. It appears, however, that in future program development attention should be given to each of these dimensions. Evidence of planning toward meeting adequately the criteria of each of these dimensions is found in the "Request for Publisher Assistance" produced and distributed by project personnel in attempting to collaborate with commercial publishers and distributors of curriculum materials in the next stages of curriculum development, teacher education, program evaluation, and dissemination. This document is an excellent indication that the program developers are aware of these needs and are attempting to meet them. One note of caution needs to be raised. Many commercial producers are not interested in or willing to invest much time or money in developing teacher education programs or conducting proper field studies and evaluation prior to wide scale dissemination and implementation. Rather they wish to develop the materials quickly and disseminate them rapidly to return money on production and development costs. Consequently it may be wise to write into the contracts with commercial producers, agreements for teacher education and evaluation functions to be carried out by some other groups. Local universities and colleges offer one source of some able graduate students and professors with the necessary skills to carry out these functions at minimal cost.

Doctoral students often have difficult times identifying significant research topics for their dissertations. Designing components of a teacher education program and evaluating them or designing and carrying out evaluation plans to determine the effectiveness of certain curricular components would be most worthy topics for doctoral students in educational psychology and curriculum and instruction departments. Of course in using these college and university resources, the program developers should prescribe very carefully the type of program or evaluation to be designed and carried out as most graduate students and professors will not have the necessary broad conceptualization of the program which may be necessary to proceed with a proper and effective training and evaluation design. In such situations it is wise to establish a series of tasks and milestones which are designed to insure keeping the work on target. Such activities cannot simply be globally subcontracted. They must be carefully planned and supervised by the project staff if the results are to be logically integrated and meaningful.

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